STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

April 8, 2011

Bruce E. Patrick, P.E.
Vice President of Engineering
Tidewater Environmental Services, Inc.
1100 South Little Creek Road
Dover, DE 19901

RE: Wandendale Regional Wastewater Treatment Facility
Regional System Permit Application Received December 20, 2010
Resubmitted March 8, 2011

Dear Mr. Patrick,

I have reviewed the application and supporting documents made to the above mentioned permit application, and offer the following comments:

I. Design Report
- A. Location
  - i. Please revise the description of location to indicate what County the site is located in.
- B. Applicable 2003 Comprehensive Plan
  - i. Please identify the approved neighborhoods that the proposed facility will serve.
- C. Project Phasing
  - i. Please provide a description of the equipment used for treatment in the package plants for Phases 2 and 3.
- D. Exhibit I – 3 Phase 2 and 3 Concept Plan
  - i. The locations for the Phase 2 and Phase 3 package plants do not match the locations of the package plants on the Construction Drawings.
- E. Membrane Bioreactor
  - i. Exhibit VII-3 Membrane Bioreactor Design Features. The flow specified for the design is 1.0 MGD. Please revise this for the 1.45 MGD proposed capacity.

F. Disinfection
    i. Please provide a specific type of disinfection that will be used during Phases 2 and 3.
G. Disposal
    i. Phase 4 specifies that additional RIBs will be constructed. This differs with the Phasing detailed in the Coastal Zone Act Special Condition #7. Please revise the RIB construction proposed in Phase 4 of the Disposal section of the Design Report so that agrees with Special Condition #7.
    ii. Please include a description for Phases 5-12.
H. Attachment A
    i. Please revise #14 on the Equipment Cut Sheets Index from RHS to RAS.

II. Site Plans

A. Sheet 1
    i. Please provide the location of the approved neighborhoods that the facility will serve on the Location Map.
    ii. Please provide a note stating "All below grade piping shall be PVC SCH 40, SDR 26, or HDPE SDR 11 and above grade PVC SCH 80 unless otherwise noted. Ductile iron piping may be used throughout. Joints shall be glued, restrained, or thrust blocking is to be provided. All below grade piping shall maintain 3 feet of cover."
B. Sheet 3
    i. Please label the tree line that will be removed.
C. Sheet 4
    i. Please show the interim force main and provide a note detailing the connection.
    ii. Please label the bends for the forcemain.
D. Sheet 4B
    i. Please revise the hatching of the Headworks Building to be constructed or existing in Phase 4.
    ii. Provide a bypass for the influent and effluent flow meters.
E. Sheet 14
    i. Please confirm the location of the 8" thick concrete pad
F. Sheet 19
    i. Please provide dimensions and volumes on all basins.
G. Sheet 21
    i. Specify the treatment capacity of the configuration on this sheet.
    ii. Please show the project phasing on this configuration.
H. Sheet 22
    i. Please specify the walkway width.

ii. Provide volumes for the Pre-Anoxic, Aeration, and Post-Anoxic tanks.

I. Sheet 27
   i. The RAS Pump detail note calls out a model CP3153 pump, however the Equipment Cut Sheet specifies a model NP3153 pump. Please confirm which specification is correct.

J. Sheet 46
   i. Please show Soil Boundary Lines if they are on the site. If they are not then provide a statement regarding the soil type of the disposal area.
   ii. The Phased Installation Notes specify that the 12" diameter dosing main will be constructed in Phase 2; however there is a call-out on this sheet that notes the dosing main will be constructed in Phase 4. Please confirm the Phase of construction for the 12" diameter dosing main.
   iii. Please show the dimensions for the RIB's, and the berms around the RIB's.
   iv. Please label the bends for the dosing forcemain.
   v. Please provide a note on the plans stating "A soil scientist shall be on site during excavation and fill for the Rapid Infiltration Basin areas."
   vi. Please revise the perimeter fence to be the split-rail with wire.
   vii. Please specify that signs shall be posted every 200 feet along the perimeter fence to indicate the site is a reclaimed wastewater land application area and that access is restricted to authorized personnel only.

K. Sheet 47
   i. Please explain the purpose of the 3/16" drain with 4CF of crushed stone shown on the Distribution Nozzle Assembly Detail.
   ii. Please provide a slope liner detail for the berms.
   iii. Please provide a note stating that silt fence shall be installed around the bottom perimeter of all RIB's and show the silt fence on the Typical Berm Sections.
   iv. Please revise the Typical Exterior and Interior Berm Sections so that they correspond to the section lines shown on Sheet 46.
   v. Please include the attached notes for Rapid Infiltration Basin construction.

III. General

A. Please provide cut & fill information for the RIB's.
B. Please provide a point at or near the wastewater treatment facility area using the Delaware State Plane Coordinate System.

C. Please include the detail of the fencing to be used around the RIB area.
D. Please include a silt fence detail.
E. There are several sheets that have text that is light and unreadable. Please provide more legible sheets with the next submission.
F. Please consider removing the Wood Divider Wall in RIB C, and portion the areas in the RIB's by alternating the discharge to the multiple discharge points.

Once the above has been addressed, please submit for review to the Ground Water Discharges Section. Should you have any questions, please feel free to contact me at 302-739-9948.

Sincerely,

Derrick P. Caruthers
Environmental Engineer
Ground Water Discharges Section

Enclosures: Rapid Infiltration Basin Notes

cc: permit file